NATIONAL SERIES 300A

Truck-mounted Telescoping Cranes and Accessories Maximum Height: 61 Feet (18.6 Meters) Maximum Capacity: 14,500 Pounds (6.6 Metric Tons)



NATIONAL SERIES 300A

National is America's leading manufacturer of commercial truck-mounted telescoping and articulating cranes. We build cranes for a wide range of jobs. And nobody builds them better. Nationals are tough, durable, and dependable. They are designed for ease of operation.

With a National, you are assured of a well-engineered, well-manufactured, and fully tested machine designed for your applications. At National, we put quality first. Our commitment to product quality is our pledge to provide our customers with reliable products designed to provide years of service.

Our all-new Series 300A telescoping crane gives you everything you want and need in a tough, compact, 7¼-ton-capacity crane. Consider these Series 300A

- features: • 71/4-ton (6.6MT) rated capacity
- Reaches up to 61 feet (18.6m) high
- Now available with 46-foot boom
- New, improved locks on boom sequential extension

- Lighter unit weight allows more payload capacity
- Wide 15-foot (4.57m) outrigger span for greater stability
- Extra large wear pads in boom last longer and are easier to replace
- Dual controls in SAE recommended orientation; each with foot throttle
- Standard high-performance planetary winch
- Planetary rotation gear box with a hydraulic release brake and a slip-through feature that helps protect the rotation system against damage from accidental side loading
- Outrigger location (behind operator) allows occasional 360° working area without front stabilizers or counterweight when mounted on recommended truck
- Larger outrigger pads provide greater stability in soft footing
- · Mounts on standard, single rear axle trucks with the versatility of two mounting configurations
- Simple mounting; no reinforcing, subbase or rear stabilizers required on most trucks
- · New boom pivot and hoist cylinder bearings provide longer life and lower maintenance
- New standard tandem pump system isolates winch from other crane functions to provide better overall performance
- Horn and stop switches located at control stations
- Complete accessory line adds to versatility



NATIONAL **SERIES 300A**



Stronger, Lighter Booms Through computer aided

design, National has removed weight from the Series 300A boom sections. We fabricate our telescoping boom sections from four highstrength steel members welded with perpendicular corners. This box-section construction lets us use thicker top and bottom plates for extra strength. The use of thinner side plates means increased capacity through lower boom weight. Only strong, low alloy steel is used in National booms. It is welded with advanced. automatic, low-hydrogen techniques for extra strong seams. Corner seams are ultrasonically tested for proper penetration.

Sequential Extension

to the industry. Our boom

sequential extension. The

greater strength. National's

mechanical, not hydraulic.

design used on our popular

Series 600 and Series 800

reliability with no excessive

noise or wasted hydraulic

power. They are just one

more example of how

performance for you.

National know-how and

models. They provide

National introduced

sections interlock for

larger, stronger boom

patented locks are

sections extend first for

The National Series 300A is equipped on all sides with extra large nylon wear pads impregnated with lubricants which provide a smooth. long-life operation. The wear resistance of the material used in the Series 300A pads is unexcelled by competitive models.

High Performance Planetary Winch

A high-performance planetary winch is standard on the new 300A. This high-efficiency winch coupled with a highefficiency motor and a counterbalance valve provides extremely smooth loadline control and quiet operation. It allows extended duty without excessive power loss.





Do not operate crane or accessories within 10 feet (3m) of live power ines.

Positive Planetary Turret Rotation

The planetary rotation gearbox with a hydraulic release brake allows the gearbox to backdrive whenever excessive side load is applied to the boom, reducing shock loads on the upper and lower crane structure and gearbox. The turret drive is designed with extra heavy bearings below the drive pinion. The gearbox and rotation bearing mounting surfaces are precision machined after welding. This ensures constant tooth alignment for smooth rotation and low wear, even under maximum loads. The entire turret glides smoothly on a low inertia ball bearing race. Rotation is 375° noncontinuous.







holes for serviceability. The Series 300A frame allows easy access to control valves and plumbing for minor adjustments and fitting tightening. The complete console is easily removeable for major repair.

NATIONAL SERIES 300A



Wide Stance

We've given our new Series 300A the industry-acclaimed National out-and-down outriggers for a consistently wide stance and better leveling on uneven ground. The outriggers retract smoothly, without binding under load, first moving up, then in. Their efficient design and wider span - 15-foot (4,570mm) - gives you solid | set-up procedure.

stability without requiring rear stabilizers on standard mounts. With less truck weight, you can carry larger payloads more economically. The 300A is equipped with larger pads for greater stability in soft footing. A precision mounted level indicator aids the operator in leveling the unit during the

National's "Out-and-Down" Stable Outriggers



• No skidding the foot into position.



Less Weight

The new Series 300A is designed with wider outriggers to eliminate the need for counterweight and rear stabilizers on standard mounts.



Less Space

The National Series 300A is built tough, but compact, so it fits in just 36 inches (923mm) of bed space. That leaves ample payload space, making your Series 300A even more versatile. The 300A controls and operator platforms are designed with an improved access to the truck bed, permitting the operator to move from one control station to the other. The operator platforms are made with open mesh expanded metal to keep dirt and mud buildup to a minimum.



NATIONAL SERIES 300A BOOMS AND JIBS



Boom and Jib Combinations

• Model 337A: 15½- to 37-

section

- Model 346A: 18½- to 46foot (5.6m to 14m) three
- Model 3FJ15: 15-foot (4.6m) straight (for Model 337A)

Jib Options (side stowing)

K.

337A Capacity*

(Metric equivalents shown in parentheses)

Radius	All Booms Retracted	Second Section Extended	Third Section Extended
Maximum Capacity	14,500 lbs. (6,577kg.)		
8' (2.4m)	8,300 lbs. (3,765kg.)	7,750 lbs. (3,515kg.)	6,450 lbs. (2,926kg.)
12' (3.7m)	6,050 lbs. (2,744kg.)	5,300 lbs. (2,404kg.)	4,900 lbs. (2,223kg.)
16' (4.9m)		4,100 lbs. (1,860kg.)	3,750 lbs. (1,701kg.)
20' (6_1 m)		3,300 lbs. (1,497kg.)	3,000 lbs. (1,361kg.)
24' (7.3m)		2,700 lbs. (1,225kg.)	2,600 lbs. (1,179kg.)
28' (8.5m)			2,200 lbs. (998kg.)
32' (9.8m)			1,850 lbs. (839kg.)
36' (11m)			1,450 lbs. (658kg.)

Capacities shown are for the 337A with the load suspended, radius shown includes increase due to boom deflection. Capacities vary for cranes equipped with jibs or attachments. Consult factory for specific load rating information.

Do not operate cranes or accessories within 10 feet (3m) of live power lines.

1. Load ratings shown on these charts are maximum allowable loads with the outriggers properly extended on a firm, level surface and the crane leveled and mounted on a factoryrecommended truck.

2. Always level the crane with the level indicator located on the crane frame.

3. The operator must reduce loads to allow for factors such as wind, ground

conditions, operating speeds and the effect of freely suspended loads.

4. Overloading this crane may cause structural collapse or instability.

5. Weights of any accessories attached to the boom or loadline must be deducted from the load chart capacities.

6. Do not exceed jib capacities at any reduced boom lengths.

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	NAL	ERIES				
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0		nal Serie: Vinch Da		1 Part Line	2 Part Line	3 Part Line
0	Caution • Do no against extendi • Keep a load lin • Use on	Vinch Da	ta l lineblock hen wraps of at all times.			
0	Caution • Do no against extendi • Keep a load lin • Use on	Vinch Da t deadhead boom tip wi ng boom. t least three e on drum a ly the specif	ta l lineblock hen wraps of at all times.			
0	Caution • Do no against extendi • Keep a load lin • Use on on this	Vinch Da t deadhead boom tip wi ng boom. t least three e on drum a ly the specif machine. Cable	ta l lineblock hen wraps of it all times. lied cable Average Breaking	Line	Line	Line

All winch pulls and speeds are shown on the third layer. Winch pulls would increase on the first and second layers. Winch line speeds would decrease on the first and second layers. Winch line pulls may be limited by the winch capacity or the OSHA 3.5 to 1 cable safety factor. These are shown below:

factor. These are shown	Delow.	Allowable
Winch	Bare Drum Pull	Cable Pull
Standard Planetary	6,450 pounds	6,600 pound:
Optional Planetary	10,200 pounds	8,400 pounds

8



working position.

NATIONAL SERIES 300A TRUCK SPECIFICATIONS

Minimum Truck Requirements

GAWR Front..... 9.000 pounds (4,082kg) Rear17,500 pounds* (8,392kg)* GAWR means Gross Axle Weight Rating and is dependent on all components of the vehicle, such as axles, tires, springs, frame, etc., meeting manufacturer's recommendations. Always specify GAWR when purchasing trucks. Cab to Axle

(CA) 120 inches (3m) on 337A+ 138 inches (3.5m) on 346A • Wheelbase (WB)... 184 inches (4.7m) on 337A 202 inches (5.1m) on 346A Truck frame requirements are included with each mounting

configuration description (at the right).

Note: Minimum axle requirement may increase with use of longer wheelbase, service bodies, diesel engines or front stabilizers. Diesel engines require variable speed governor and energize-to-run fuel solenoid for smooth crane operation.

*Tandem axle trucks must be used for hauling larger payloads.

+On trucks shorter than 120CA, additional weight may be required at the rear axle to provide stability.

Mounting Configurations

The versatility of the Series 300A can be enhanced by the mounting configurations described below. The complete unit must be installed in accordance with factory requirements and a test performed to determine actual stability and counterweight requirements since individual truck chassis vary.

Configuration 1 (Standard)

360° stability without

prior to the installation of the crane, bed, pump, PTO and In most cases, if the truck is oil tank. The truck frame strength required is 15-inch^a purchased to minimum specifications, this standard section modulus between mounting configuration allows axles and 10-inch³ section modulus through suspension with 50,000 PSI frame counterweight, subbase, or rear stabilizers. Since the material or 10-inch³ section modulus between axles and front tires are used as a stabilizing base, lifting over 10-inch³ section modulus through suspension with the front is recommended 110,000 PSI frame material. only for occasional use. If loads are to be continually With this mounting lifted around the front of the configuration, a payload of approximately 9,000 pounds vehicle, front stabilizers are (4,082kg) can be hauled on a recommended to give this unit a firm base. The truck minimum truck. weights shown are actual



axle scale weights

The advantages of a rearmounted Series 300A are: (1) it allows the operator to effectively use the close-in working area to lift heavier loads, and (2) it provides 360° solid stability at full rated load. The truck weights shown are actual axle scale weights prior to the installation of the crane, extra-strength subbase, bed, pump, PTO, oil tank, and A-frame* hydraulic stabilizers behind the cab. Counterweight may be required on a minimum truck. Truck frame strength required is 10-inch³ section modulus from the back of the crane

frame to the cab with 50,000 PSI truck frame material or 10-inch³ section modulus from the back of the crane frame to the cab with 110,000 PSI truck frame material. With this mounting configuration, a payload of approximately 7,000 pounds (3,175kg) can be hauled on a minimum truck.

*Underframe stabilizers clearance behind the cab may interfere with the drive line or cause around clearance problems. If so, contact the factory for alternatives.



NATIONAL **BOOM RESTS**

Cranes are tough when they're in use, but they can be severely damaged during travel from job to job. The only way to make sure your crane is protected from

inadvertent damage is a strong, solid, boom rest.

Boom Rests:

- · Add years to the life of your crane
- Reduce stress on the crane frame

 Protect rotation gear from transit damage

- Remove stress from truck frame
- Spread crane load more
- evenly Reduce maintenance and downtime

In addition, boom rests offer you a safer, positive way to immobilize your crane for transit.

We offer five heavy-duty boom rests for strong, sure protection of your crane. There's a quality National boom rest to fit your mounting configuration. Only shorter booms can be stowed forward

So protect your investment and add additional low maintenance years to the life of your crane with a boorn rest tailored to your truck/crane combination_All factory-mounted cranes will be supplied with boom rest.









FULL

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Larger Front Axle Rating Required

tilting hoods

Front mount for trucks with

Horizontal rear bed mount for

Low-profile rear bed mount for

lower center of gravity

greater load space

Tractor/trailer rear mount



Larger Front Axle





Tractor/trailer front mount



NATIONAL WARRANTY, **PARTS AND SERVICE**

The National Warranty

No product is better than its warranty. And no warranty is better than the company behind it.

We didn't get to be America's largest manufacturer of truckmounted telescoping and articulating cranes by building less than the best. Or backing them with less than the most comprehensive warranty possible.

Our warranty covers your crane against defects in materials or workmanship for six full months from the date of shipment, subject to the conditions of the warranty.

When you select a National crane, you're getting more than just a crane. You're getting a nationwide dealer warranty service network. strong warranty protection and our special concern for every product we make.

Read our warranty. Then, don't settle for less. For complete information, write National Warranty Service, Waverly, NE 68462.



The National Parts System

Because even National cranes need parts, we back our dealers with an immediate, extensive parts supply. So your crane can get back on the job fast.

We have a highly trained parts and service staff to answer dealer service questions and expedite parts shipping. Most National parts will be on their way within 48 hours on request.

The National Service Center

Just west of Lincoln, Nebraska, we maintain one of the finest crane and truck service centers in the United States. Here, we do all our factory crane mounting.

The central location of our Lincoln Service Center makes it easy to return cranes for special modifications or extreme repairs. Most National dealers can perform all but the most unusual modifications or most serious repairs.

Should you need to return your crane to us for modification, warranty repair or other service, we will give it priority care and see it's returned as soon as possible.

NATIONAL SERIES 300A ACCESSORIES

Every Series 300A is part of the National Lifting System.

The National Lifting System can equip your 300A to do more than just lift or handle materials. It lets you equip your truck-mounted crane to perform the functions of a whole fleet of specialized vehicles, and at a fraction of the cost.

Because your 300A can do so many jobs from start to finish, you save time, money, and manpower on almost every job you do. You'll find you can do more, faster, with less equipment. And that's money in your pocket.

National accessories are designed and manufactured to the same excellent standard as our cranes. This provides you with years of low-maintenance, highproductivity service.

Get the most from your National 300A. Make it more than just a crane with costefficient, hard-working accessories from the National Lifting System.

Note:

Weights of all accessories attached to the boom or loadline of the crane must be deducted from the effective lifting capacity.

Consult your dealer for specific accessory availability. Some accessories cannot be used in combination with other accessories and/or certain boom/jib combinations.

Remote Control

National offers one-hand remote control for your Series 300A. Ideal for use where precise control and total load visibility are required.

Fine metering and instant response mean operators can position loads or work platforms easily.

National's remote controls are built with solid state circuitry and few working parts. They are designed for reliability. You will be impressed with the high operating speeds and modular design.

Available in two models: R4 with tilt, turn, telescope and winch functions, and R3 with tilt, turn, and telescope only. R3 should be used to control cranes from basket, using optional extension cables.

A priority control valve, operated by a trigger on the remote control unit, regulates oil flow and gives you fingertip speed control over all crane functions.

National's remote control is the lightweight, easy-to-use way to add extra versatility to vour crane. Consult vour dealer or the factory for availability.

Model R3 Tilt, turn and telescope Model R4

Tilt, turn, telescope and winch



One Person Basket

Strong, lightweight fiberglass basket with 300 pounds capacity puts personnel where you want them for tough maintenance and installation jobs. Optional dual basket bracket for two-basket operation on main boom. (Note: Jib will accommodate only one basket.) Easy on-off. Safety belts included. With basket(s) attached to the crane, the crane must not be operated at a position where the crane load chart shows less than the following capacities:

- One fiberglass basket— 550 pounds
- Two fiberglass baskets— 1,100 pounds

Two Person Basket

Extra capacity steel basket, swing-mounted to self-level. An adjustable, over-center, lever-operated friction brake for stability and locking. Safety belts included. The basket must not be used in load-rated areas where the crane load chart shows capacities less than 950-pounds. The maximum capacity of the basket is 500-pounds.



Model B1 Model B1-L With lock



Model BS-1 5-ft. yoke Model BS-2 12-ft. or 17-ft. yoke

Caution

Do not operate cranes or accessories within 10 feet (3m) of live power lines, includina:

- Pallet Fork
- One Person Basket
- Two Person Basket
- Remote Controls
- Winch
- Loose Material Clam Bucket

Do not exceed jib capacities at any reduced boom lengths.



CALENDARY AND A CONTRACT OF A	
Rear Mounted	
dels RSH-15/18/25)	

Vertica	Travel	
	d Penetration	
(38" Fr	ame Height)	
Operat	on	All-Hydraulic
Span	 • • • • • • • • • • • • • • • • • •	6 (RSH-15)
		8' (RSH-18/25)
Control	5	All stab

6

60"

24"

Cross-frame Outriggers

Stabilizers

Stabilizers

We offer a complete range of

front and rear stabilizers with

Extended Span 15 7 11 Retracted Span Vertical Travel Over-Frame 25" Under-Frame 18 Ground Penetration (38" Frame Height) 10" Mounting Space Crane/Outrigger Outrigger Only Behind Mounting cab. at rear of chassis or both

Loose Material Clam Bucket

Increase the flexibility of your National crane with a National Clam Bucket, Use this versatile accessory to load or move up to 1/2 cubic yard of loose materials with each bite. Hooks easily to loadline, comes with 50 feet of hydraulic hose on automatic reel and quickconnect fittings. Just position the load where you want it and open the bucket.

Model LMC





Rear Mounted (Model ASH)

Front Mounted (Model FSH-25 Fixed, Model FSHF-25 Folding

Behind Cab Mounted (Model ASHBC)

... All-Hydraulic All-Hydraulic All-Hydraulic

Controls All stabilizers noted above can be operated from either crane control station

Pallet Fork

Turns your Series 300A into a versatile, payload-packing fork lift. Great for delivering palleted material right where you want it. 4,400 lbs. (1.814kg) capacity with adjustable throat and teeth. Handles most loads with ease.

Capacity: Throat Opening: 4,400 lbs. at 20" center distance

38

(adjustable) Tooth Length: Tooth Width: (outside to outside) Weight:

33.5" to 57 min max 350 bs.

Model MKF

(Manual leveling, adjustable throat)



Hiah Pull **Planetary Winch** Extra capacity, heavy-duty winch with planetary gear drive for smoothness and strength.

Model PD-12



NATIONAL SERIES 300A SPECIFICATIONS

General Construction:

Low-alloy, high strength steel. including T-1, Ex-Ten, Stressproof, Hi-Yield, and other steels combined with special, low-hydrogen welding techniques wherever advantageous. Standard color: painted National Ivory. Frame:

Box construction. Weld-on truck frame mounting brackets form base for crane frame, spacer and optional subbase attachment. Bolt-on optional. Rotation bearing, gearbox, and level indicator mounting surfaces are precision machined after welding to ensure accurate alignment and flat surfaces for prolonged life.

Turret:

Fabricated, rigid structure, well-braced for stability. The bearing surface is machined and the pin holes are bored after welding to ensure accurate alignment and flat surfaces for prolonged life. Rotation:

375° noncontinuous. Rotational force 92,000 in./lbs. (600,000 in./lbs. breaking strength). Turret rotation is by hydraulic orbit motor and planetary gearbox driving a pinion. The turret rotates on a ball bearing race. Spring-applied hydraulic release brake provides positive, no-drift lateral positioning.

Outriggers:

"A" frame box-type 15-foot span (center of pad at ground level) moves out-anddown, will not bind when raising or lowering truck. Can be positioned to 8 inches below ground level when mounted on truck with a frame height of 38 inches. Outrigger cylinders are equipped with butt-mounted, safety check valves. Equipped with extra large pads to reduce around pressure loading and for greater stability in soft footina. Tilt:

Double-acting hydraulic cylinder raises and lowers

the boom; butt-mounted, safety holding valve prevents the boom from falling in the event of hose failure. Tough, field-tested bearings in tilt cylinder and boom pivot combined with micro-honed pins provide long life with reduced maintenance.

Boom:

Boxed construction. Telescopes hydraulically in sequence under rated load on nylon plates impregnated with molybdenum disulfide on all sides of boom, permitting maximum loads to be extended at greater radii. Holding valves prevent retraction except under power.

Controls:

Dual side, stand-up, with operator platform and foot accelerator identical on both sides, Simultaneous operation of load-line and other operations standard. Horn and stop switch on both sides. Controls easily removable for maintenance.

Winch:

Hydraulic gear motor with planetary gear reduction, brake, and counter-balance valve for "power down" load

lowering. 6,450-pound bare drum, single line pull

available with 190 feet of 1/2" diameter, 11.60-ton breaking strength loadline. Optional Planetary Winch available with 10,200 pounds bare drum, single line pull, 220 feet of 9/16", 14.7 ton breaking strength loadline.

Pump:

One Vickers, high-pressure, high speed, balanced vane, replaceable cartridge-type tandem pump independently providing 25 gpm to winch, and 14 gpm to crane for smooth, fast, simultaneous operation.

Cylinders:

Shaft packing: Polyurethane U-cup type. Shafts Hi-Yield, stress-relieved, chromeplated. Piston sets: Polyurethane U-cup and rider construction. Cylinder barrels: Micro-honed tubing, buttmounted, safety check valves.

Valves:

Four-way, spring-centered, spool-type with independent relief valves set at 1,900 psi (maximum 3,050 psi on winch system) to protect circuits against overload.

Hose:

All high-pressure hose is wire-braid reinforced, having a minimum safety factor of 4 to 1.

Operating Speeds:

Rotation 375°, 35 seconds. Boom up, -15° to 80°, 14 seconds. Boom down, 80° to -15°, 14 seconds, Boom extend: 38 fpm. Boom retract: 46 fpm. When using remote control, crane function speeds will be reduced by 50% to assure smooth operation. (Speeds above assume no load with 14 gpm oil flow on boom and 25 gpm on winch.)

Oil Tank Capacities:

32-gallon supply tank. Normally mounted on subframe. Sight gauge. clean-out, and magnetic plug. System has an approximate 45-gallon total capacity.

Filter: 10-micron, replaceablecartridge, return-line filter. 100% filtration.

Capacity Alert Systems:

Devices available to reduce possibility of operator error. See your dealer.









NATIONAL Series 300A Proposal

PROPOSAL	2. Boom	
	3. Jib	
	4. Rear Stabilizers D ASH D RSH 18	
Date:	5. Front Stabilizers Std. Tilt	
Prepared for:	6. Line Block	
	7. PD-12 Planetary Winch	
	8	
Submitted by:	9	
	10	
	Mounting:	
(Firm Name)	11. Installation: Behind Cab	
	12. Installation: Rear Mounting (add to installation charge above)	
(Address)	ASH Behind Cab Stabilizers	
(1001000)	Air Throttle	
	Rear Mounting Group	
(City & State)	HO Outriggers	
(Zip)	13 Frame Reinforcement: D Weld	
	D Bolt-Extra	
(Phone)	14, Platform Bodyft, D Wood D Steel	0
Signed:	15. Weight in bedIbs. (if required)	
	16, Boom rest; Parallel Low Other	
	17. Mount Stabilizers (Rear)	
	18. Mount Stabilizers (Front)	
	19. Chassis	
	20. Rear Bumper Underride Protection D Ordered D Not Ordered	· · · · · · · · · · · · · · · · · · ·
	21. Freight	
	This quotation will remain firm fordays	
	Accepted by:	_\$
	(Name)	TOTAL PRICE
	(Firm Name)	(Date)

Description

1. Series_

General Offices: 11200 North 148th Street/Waverly, NE 68462/402/786-2240 Service Center: 701 N.W. 27th Street/Lincoln, NE 68528/402/474-2666

Your National Dealer

Subsidiary of Kidde, Inc KIDDE National reserves the right to change designs, prices, and specifications at any time without notice.

NATIONAL CRANE

Price

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